

## AltaView BC Example – Multiple Message Frequencies (Rich Wade – 26 NOV 12)

We want to use the AltaView BC Control Panel to define the following message timing:

Send these messages at 100Hz: 3-R-1-32, 3-R-2-32, 3-R-3-32

Send these messages at 50Hz: 3-R-4-32, 3-R-5-32

Send these messages at 25Hz: 3-R-6-32, 3-R-7-32

In order to implement this frame timing, we first need to define our “major” frame time (based on the slowest message rate) and our “minor” frame time (based on the fastest message rate), and from this determine the number of minor frames per major frame.

Our slowest message rate is 25Hz, so we have a **major frame time of 40ms**.

Our fastest message rate is 100Hz, so we have a **minor frame time of 10ms**.

Therefore, we have **four minor frames per major frame**.

The AltaView BC uses “basic” frame timing (thus the term “Basic BC” in the tab). AltaView does not use “advanced” frame scheduling with minor frame start frames, rep rates, schedule times, etc. This advanced approach can be used with your own programs using the Alta API.

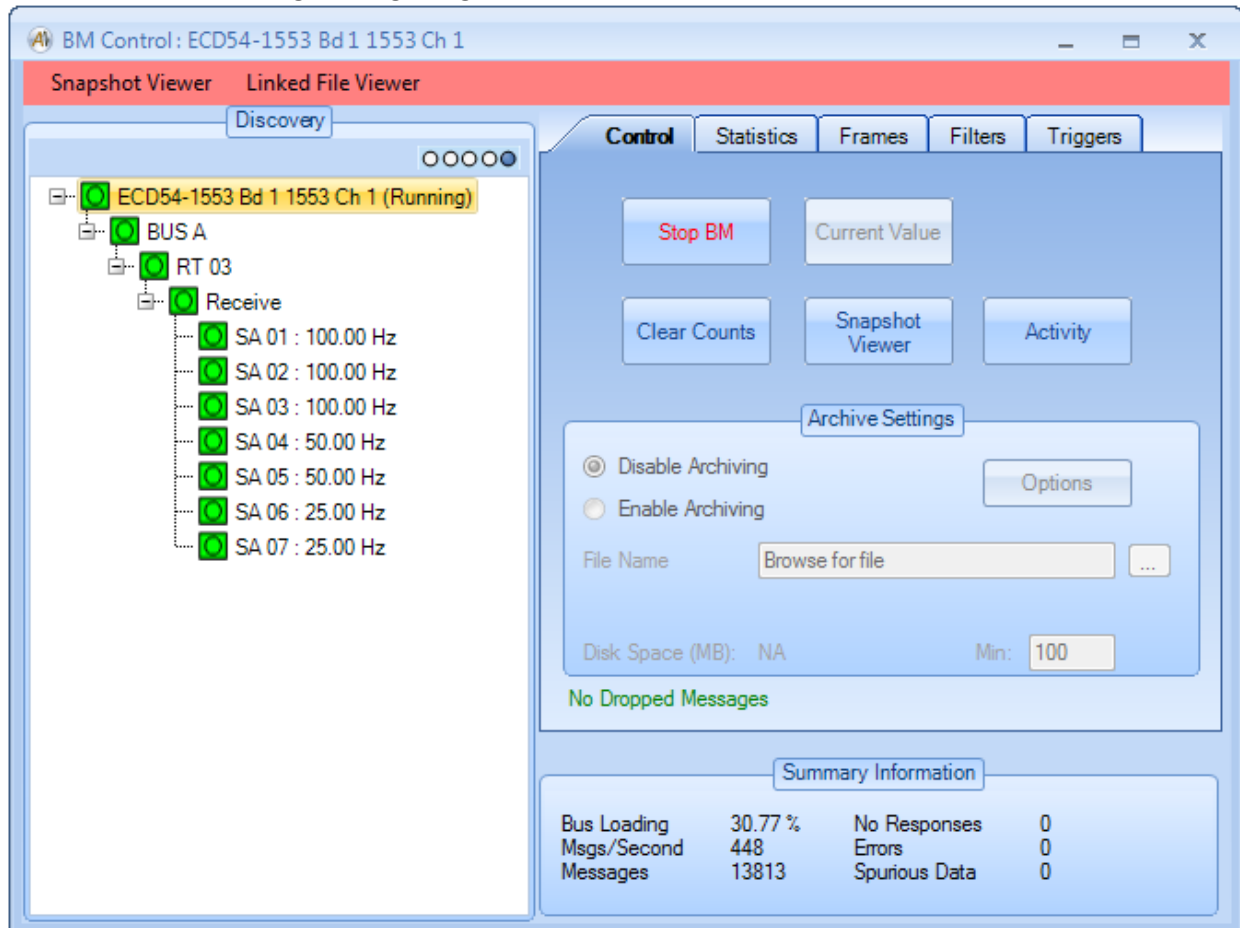
The AltaView BC message list must define a complete major frame – in this case, we have four minor frames per major frame so our BC message list must define **four minor frames**. The “Frame Time” set in the BC Control Panel must be the minor frame time (this is the time for each frame marker in the list), so we **set the frame time to 10ms**. The 100Hz messages will occur in EVERY minor frame. The 50Hz messages will occur in EVERY OTHER minor frame. The 25Hz messages will occur in ONLY ONE minor frame.

The screenshot displays the 'BC Control Panel' for 'ECD54-1553 Bd 1 1553 Ch 1'. The interface is divided into several sections:

- Bus Controller List:** A tree view on the left showing a hierarchy of frames and messages. The top-level frame is expanded, showing 17 messages (Msg# 0-17) grouped into four frames. The messages are: Frame 0 (Msg# 0-3), Frame 1 (Msg# 4-5), Frame 2 (Msg# 6-8), and Frame 3 (Msg# 9-11).
- Basic BC Tab:** The active configuration tab. It includes:
  - Top Level:** 'Run Continuously' is selected. 'Frame Time (ms)' is set to 10 (circled in red with a label 'Minor Frame Time'). 'Frame Count' is 0. 'Start BC' button is visible.
  - Frame Level:** Buttons for 'Add BC-RT', 'Add RT-BC', 'Add RT-RT', 'Add MODE', and 'Delete'.
  - Message Level:** 'Type' is 'BC-RT'. 'IM Gap (us)' is 10. 'Bus A' is selected. 'CMD1' and 'CMD2' fields are populated with values like RT, TR, SA, and WC. 'Error on CMD1' and 'Error on CMD2' buttons are present. 'Enabled' checkbox is checked.
  - Buffer Level:** 'Edit Buffer' and 'Error on Data' buttons.

Therefore, the 100Hz messages occur 4 times in the major frame (every minor frame), the 50Hz messages occur 2 times in the major frame (every other minor frame), and the 25Hz messages occur 1 time in the major frame. Note that each of these occurrences of a given message has its own data buffer for receive messages – if you change the data you need to make the change on all occurrences of the message.

We can check our message timing using the 1553 BM Control Panel.



This gives us:

- 100Hz for the SA1, SA2, and SA3 messages
- 50Hz for the SA4 and SA5 messages
- 25Hz for the SA6 and SA7 messages